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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,901	08/14/2001	John William Court	AGLE0034	9287

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GLENN PATENT GROUP
3475 EDISON WAY, SUITE L
MENLO PARK, CA 94025

EXAMINER
PWU, JEFFREY C

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/929,901	COURT ET AL.
	Examiner	Art Unit	
	Jeffrey Pwu	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.
2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-20_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) _1-20_ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)
1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-20 are rejected under 35 U.S.C. 102(e) as being unpatentable over Keller et al.

(U.S. 6,275,905).

Keller et al. disclose claims :

1. A data transfer apparatus, comprising:

a first processor (12A); a second processor in communication with said first processor via a data

exchange path (12B); each processor comprising a corresponding plurality of buffers (IF);

each processor comprising a set of four counters that are organized as two pairs, where one pair

of counters is used by a transmit channel via a data exchange path and a second pair of counters

is used by a receive channel via a data exchange path (16A, 16B, 16C, 16D, 18A, 18B, 18C,

18E, 18F, 18G, 18H, 18I, 18J, 18K, 18L, 18M, 18J, 18K, 24A, 24B, 24C, 24D, 24E, 24F, 24G,

24H, 24I, 24J);

wherein said processors reserve remote buffers to coordinate the exchange of data packets by

writing to said counters remotely and reading from said counters locally (col.5, line 56-col.6,

line16);

wherein said processors exchange said data packets with posting operations and without resort to

remote read operations (col.4, line 51-col.6, line 54).

2. The apparatus of claim 1, said counters comprising for each processor, one each of:

a remote buffers available counter; a local packets sent counter; a remote packets received

counter; and a local buffers available counter (col.10, line 64-col.11, line 15).

3. The apparatus of claim 2, wherein: said remote buffers available counter is configured for

local processor write only operation and remote processor read only operation; said local packets

sent counter is configured for local processor read and write operation; said remote packets

received counter is configured for local processor write only operation and remote processor read

only operation; and said local buffers available counter is configured for local processor read and

write operation. (col.10, line 64-col.11, line 55).

4. The apparatus of claim 1, wherein said counters are non-wrapping (col.10, line 64-col.11, line

15).

5. A method for transferring data, comprising the steps of: allocating a number of receive buffers

locally with a first processor; transferring addresses of said allocated buffers to a second

processor; said first processor incrementing a local buffers available counter by a number

corresponding to the number of local buffers allocated; said first processor writing said updated

value to a remote buffers available counter in said second processor; said second processor

transferring data packets to buffers associated with said first processor; said second processor incrementing a local packets sent counter after each packet is sent to said first processor until a value in said remote buffers available counter minus a value in said local packets sent counter is equal to zero or until all packets have been sent, which ever occurs first; writing a current value of said local packets sent counter on said second processor to a remote packets sent counter on said first processor; said first processor determining a number of completed transfers by subtracting a value in said remote packets sent counter from a value in said local buffers available counter; and processing said buffers accordingly (col.5, line 57-col.6, line 64; also see fig.1).

6. A method for transferring data, comprising the steps of: a first processor allocating buffer space when a second processor wants to send data to said first processor; said first processor querying a local buffers available counter to determine if there is room for information on said first processor; said first processor writing a value from said local buffers available counter to a remote buffers available counter in said second processor; said second processor transferring data packets to said first processor; said second processor incrementing a local packets transferred counter for each packet that is transferred; and said second processor writing a value to a remote packets transferred counter of said first processor from said local packets transferred counter; wherein said first processor knows how many packets it received and can read them locally. (16A, 16B, 16C, 16D, 18A, 18B, 18C, 18E, 18F, 18G, 18H, 18I, 18J, 18K, 18L, 18M, 18J, 18K, 24A, 24B, 24C, 24D, 24E, 24F, 24G, 24H, 24I, 24J; fig.1).

7. The method of claim 6, said first processor sending a remote buffers available value from said

local buffers available counter to said second processor once said first processor has read said

packets locally (col.10, line 64-col.11, line 15).

8. The method of claim 7, wherein said buffers reside in a single, memory, that is partitioned

such that each processor has its own memory space (col.9, line 54-col.11, line 40).

9. A method for transferring data among two or more processors via a data exchange path,

comprising the steps of: a first processor writing a local buffers available value from a local

buffers available counter to a remote buffers available counter in a second processor via said data

exchange path; said second processor transmitting data packets to said first processor; said

second processor incrementing a local packets transferred counter for each packet that is

transmitted; and said second processor writing a value to a remote packets transferred counter of

said first processor from said local packets transferred counter; wherein said first processor

knows how many packets it received and can read them locally (col.4, line 27-col.6, line15).

10. A data transfer method, comprising the steps of: providing a first processor; providing a

second processor in communication with said first processor via a data exchange path; each

processor comprising a corresponding plurality of buffers; each processor comprising a set of

four counters that are organized as two pairs, where one pair of counters is used by a transmit

channel via a data exchange path and a second pair of counters is used by a receive channel via a

data exchange path; wherein said processors reserve remote buffers to coordinate the exchange

of data packets by writing to said counters remotely and reading from said counters locally;

wherein said processors exchange said data packets with posting operations and without resort to

remote read operations (col.4, line 27-col.6, line15; fig.1).

11. The method of claim 10, said counters comprising for each processor, one each of: a remote

buffers available counter; a local packets sent counter; a remote packets received counter; and a

local buffers available counter (col.10, line 64-col.11, line 15).

12. The method of claim 11, wherein: said remote buffers available counter is configured for

local processor write only operation and remote processor read only operation; said local packets

sent counter is configured for local processor read and write operation; said remote packets

received counter is configured for local processor write only operation and remote processor read

only operation; and said local buffers available counter is configured for local processor read and

write operation (12A, 12B; col.10, line 64-col.11, line 15).

13. An apparatus for transferring data, comprising: a first processor for allocating a number of

receive buffers locally; said first processor comprising a mechanism for transferring addresses of

said allocated buffers to a second processor; said first processor comprising a mechanism for

incrementing a local buffers available counter by a number corresponding to the number of local

buffers allocated; said first processor comprising a mechanism for writing said updated value to a

remote buffers available counter in said second processor; said second processor comprising a

mechanism for transferring data packets to buffers associated with said first processor; said

second processor comprising a mechanism for incrementing a local packets sent counter after each packet is sent to said first processor until a value in said remote buffers available counter minus a value in said local packets sent counter is equal to zero or until all packets have been sent, which ever occurs first; said second processor comprising a mechanism for writing a current value of said local packets sent counter on said second processor to a remote packets sent counter on said first processor; said first processor comprising a mechanism for determining a number of completed transfers by subtracting a value in said remote packets sent counter from a value in said local buffers available counter; and said first processor comprising a mechanism for processing said buffers accordingly (col.4, line 27-col.6, line15; fig.1).

14. An apparatus for transferring data, comprising: a first processor for allocating buffer space when a second processor wants to send data to said first processor; said first processor comprising a mechanism for querying a local buffers available counter to determine if there is room for information on said first processor; said first processor comprising a mechanism for writing a value from said local buffers available counter to a remote buffers available counter in said second processor; said second processor comprising a mechanism for transferring data packets to said first processor; said second processor comprising a mechanism for incrementing a local packets transferred counter for each packet that is transferred; and said second processor comprising a mechanism for writing a value to a remote packets transferred counter of said first processor from said local packets transferred counter; wherein said first processor knows how many packets it received and can read them locally (col.2, line 3-col.3, line 45).

15. The apparatus of claim 14, said first processor comprising a mechanism for sending a remote

buffers available value from said local buffers available counter to said second processor once

said first processor has read said packets locally (col.6, line 34-col.7, line 45).

16. The apparatus of claim 14, wherein said buffers reside in a single, memory, that is partitioned

such that each processor has its own memory space (IF).

17. An apparatus for transferring data among two or more processors via a data exchange path,

comprising: a first processor for writing a local buffers available value from a local buffers

available counter to a remote buffers available counter in a second processor via said data

exchange path; said second processor comprising a mechanism for transmitting data packets to

said first processor; said second processor comprising a mechanism for incrementing a local

packets transferred counter for each packet that is transmitted; and said second processor

comprising a mechanism for writing a value to a remote packets transferred counter of said first

processor from said local packets transferred counter; wherein said first processor knows how

many packets it received and can read them locally (col.2, line 3-col.3, line 45).

18. A data transfer method for a system that comprises a first processor and a second processor

in communication with said first processor via a data exchange path, wherein each processor

comprises a corresponding plurality of buffers, the method comprising the steps of: providing

each processor with a set of counters that are organized as pairs, where one pair of counters is

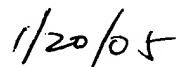used by a transmit channel via said data exchange path and a second pair of counters is used by a

receive channel via said data exchange path; said processors reserving remote buffers to

coordinate the exchange of data packets by writing to said counters remotely and reading from

said counters locally; and said processors exchanging said data packets with posting operations

and without resort to remote read operations (col.2, line 3-col.3, line 45; col.4, line 27-col.6 ,line

6).

19. A data transfer apparatus for a system that comprises a first processor and at least a second

processor in communication with said first processor via a data exchange path, wherein each

processor comprises a corresponding plurality of buffers, each said processor comprising: a

remote buffers available counter; a local packets sent counter; a remote packets received counter;

and a local buffers available counter (col.2, line 3-col.3, line 45; col.4, line 27-col.6 ,line 6).

20. The apparatus of claim 19, wherein: said remote buffers available counter is configured for

local processor write only operation and remote processor read only operation; said local packets

sent counter is configured for local processor read and write operation; said remote packets

received counter is configured for local processor write only operation and remote processor read

only operation; and said local buffers available counter is configured for local processor read and

write operation (col.6, line 34-col.7, line 45).

JEFFREY PWU
PRIMARY EXAMINER

1/20/05